Amendments to the Claims:

Cancel Claims 1-12.

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Cancelled)
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)

Please add the following new claims.

13. (New) A method for controlling an electrical network, the method comprising steps of:

determining components of a space vector of a space vector quantity in an electrical network;

determining the length of the space vector of the space vector quantity and its derivative;

determining the zeros of said derivative;

determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector of the space vector quantity;

determining, based on said determined components of the major and minor semi-axes of the ellipse formed by the space vector, the magnitude of the negative sequence component of the space vector quantity and the location of the negative sequence component of the space vector quantity in relation to a positive sequence component, and

controlling the electrical network based on said determined magnitude of the negative sequence component of the space vector quantity and said determined location of the negative sequence component of the space vector quantity in relation to a positive sequence component.

14. (New) A method according to claim 13, wherein
several values for the length of the space vector of the space vector quantity are determined, corresponding to several different moments of time, whereby the difference between two successive moments of time is equal to a sampling period;

the step for determining the derivative of the space vector of the space vector quantity comprising approximation of the derivative of the space vector of the space vector quantity with a difference received by means of the length values of the space vector of the space vector quantity and the sampling period corresponding to successive moments of time;

the step for determining the components of the major and minor semi-axes formed by the space vector of the space vector quantity in the electrical network comprising steps where differences representing the derivative of the space vector of the space vector quantity, corresponding to successive

moments of time, are compared with zero, whereby, when the later one of successive differences is smaller than zero and when the earlier difference is greater than zero, a maximum is concerned, and when the later one of successive differences is greater than zero and when the earlier difference is smaller than zero, a minimum is concerned;

whereby, when a maximum is found, the current components of the space vector of the space vector quantity in the electrical network are set as components of the major semi-axis vector of the ellipse, and when a minimum is found, the current components of the space vector of the space vector quantity in the electrical network are set as components of the minor semi-axis vector of the ellipse.

15. (New) A method according to claim 13, wherein
the length of each semi-axis of the ellipse formed by the space vector of the space vector quantity is determined by summing up the squared components of the semi-axis in question and by taking a square root of this sum;

the angle of the minor semi-axis of the ellipse formed by the space vector of the space vector quantity is determined trigonometrically on the basis of the components of the minor semi-axis of the ellipse in question; and

the length of the negative sequence vector of the space vector quantity in the electrical network is determined by dividing the difference of the lengths of the major and minor semi-axes of the ellipse formed by the space vector of the space vector quantity by two.

16. (New) A method according to claim 13, wherein the method further comprises a step where by means of low-pass-filtering components of the

space vector of the space vector quantity in the electrical network, the components containing substantially only a fundamental wave are provided, whereby the angle of the minor semi-axis of the ellipse formed by the space vector of the space vector quantity and the magnitude of the negative sequence component of the space vector quantity in the electrical network are determined on the basis of the space vector of the space vector quantity formed by said components containing substantially only a fundamental wave.

17. (New) A method according to claim 13, wherein said space vector quantity in the electrical network is voltage.

18. (New) A method according to claim 13, wherein the step of determining the location of the negative sequence component of the space vector quantity in the electrical network in relation to a positive sequence component comprises determining the angle of the minor semi-axis of the ellipse formed by the space vector of the space vector quantity in the electrical network.

19. (New) A method for compensating a voltage unbalance in an electrical network, the method comprising steps of:

determining components of a space vector of voltage in an electrical network;

determining the length of the space vector of the voltage and its derivative;

determining the zeros of said derivative;

determining, based on said determined zeros of said derivative, the components of the major and minor semi-axes of the ellipse formed by the space vector of the voltage;

determining, based on said determined components of the major and minor semi-axes of the ellipse formed by the space vector, the magnitude of the negative sequence component of the voltage and the location of the negative sequence component of the voltage in relation to a positive sequence component, and

compensating a voltage unbalance in the electrical network based on said determined magnitude of the negative sequence component of the voltage and said determined location of the negative sequence component of the voltage in relation to a positive sequence component.